

You Found

What in My Fuel?

By Lt. Luke Hofacker

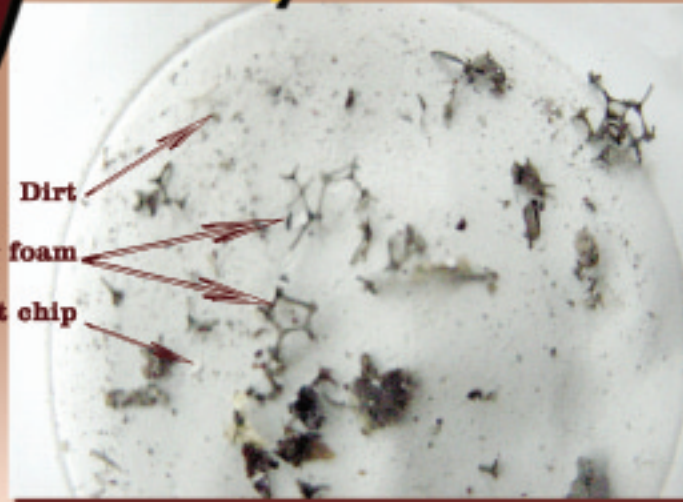
A patrol-plane commander made that statement after maintenance control called at 0500 and told him that his 0600 flight was cancelled because of large debris in the P-3C's fuel sample. That first tidbit of information would lead to an extraordinary case of contaminated fuel.

Three days earlier, the PPC had led a crew to accept a P-3C from phased depot maintenance (PDM). His crew had flown three functional check flights before accepting the aircraft. After the acceptance formalities were complete, the crew flew a short reposition flight before returning home to Marine Corp Base Kaneohe Bay (K-Bay) Hawaii.

The fuel samples taken before the flight to K-Bay revealed all four wing tanks and the fuselage tank were contaminated. The aircraft was downed, pending further research into what caused the problem. Two quarts of fuel were drained from the fuel tanks for analysis by the local base fuel lab. Initial analysis reported dirt, paint chips, explosive-suppressant-foam (ESF) debris, and what appeared to be grass in the fuel. The lab tested fuel from the fuel truck and found no contamination.

When the aircraft was in PDM, the ESF was removed and reinstalled, so they could do a wing spar inspection. When more than 25 percent of the ESF is removed from any single fuel tank, procedures in NavAir 01-1A-35 require a tank flush. Those procedures had been followed, so the reason for the high amount of

Dirt
Reticulating foam
Paint chip



This filter shows several contaminants. Note the reticulating foam found inside the aircraft fuel tanks. Paint chips, dirt, and what looks like grass also were inside the tanks.

foam particles is unknown. The research also did not determine why dirt, paint chips, and grass were in the fuel.

While the lab was doing their tests, maintainers did a ground test on the fuel system and found foam debris in the inlet and outlet side of the fuel heater's strainer on each engine. They decontaminated the fuel system, repaired the aircraft, and returned it to service.

The evidence supports that the fuel tanks were contaminated during PDM, but we were fortunate the fuel sample was found before the aircraft returned to K-Bay. If the contamination had not been discovered on the ground and the fuel filters had become clogged over open ocean, the results could have been tragic.

Lt. Hofacker is the aviation safety officer for VP-4.

